

## **ABSTRACT**

### **ALTERNATIVE OF SHALLOW FOUNDATION ON OIL TANK CONSTRUCTION**

**by**

**LIDYA THOENTHIEN MARCELINA SINAGA**

The selection of the type of foundation to be used for construction, such as the construction of oil tanks, mostly concerned about safety aspects. However, environmental and economical aspects are also an important aspects in the construction project. The aim of this research is to analyze and to search the alternative of some kind of shallow foundation that may be used in the construction of an oil tank that is expected to produce a safety foundation but more economical.

This research are obtained by analyzing from soil investigation data to calculate bearing capacity, safety factor, and settlement. The type of shallow foundation that analyzed in this research are spider web foundation, spread foundation, and cakar ayam foundation. From the results of these calculations then made comparisons to determine the type of shallow foundation that is most effective to use.

Based on calculation, then obtained the highest value of bearing capacity from 3 types of foundation is spider web foundation by the value  $217,3190 \text{ kN/m}^2$ , with value of stress soil that happened is  $97,8649 \text{ kN/m}^2$ , value safety factor by 2,5, and value of settlement by 3,3296 cm. From the comparison with spread and cakar ayam foundation, concluded that the best alternative of shallow foundation on oil tank construction is spider web foundation.

*Keywords : shallow foundation, spider web foundation, spread foundation, cakar ayam foundation.*